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PHAR 428.01: Chemotherapeutic Agents

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EXAMS AND GRADING:

First Exam: Monday, Oct. 9 50 points
 Second Exam: Monday, Oct. 30 70 points
 Third Exam: Monday, Nov. 27 80 points
 Final Exam: 100 points
 10 Point Quizzes: Best 5 out of 6 scores 50 points
 Total Points: 350 90-100% = A 80-89 % = B 70-79 % = C 65-69 % = D

- * All EXAMS are comprehensive
- * All exams and quizzes must be taken at scheduled times
- * Instructor must be informed BEFORE missing a scheduled exam period and MUST be based on GOOD REASONS
- * Missed exam periods must be made up within 2 days
- * No make up quizzes

STUDENT PERFORMANCE OBJECTIVES:

- 1) Know the normal relevant biochemical pathways and the major biochemical mechanisms of action for the different classes of drugs
- 2) Know the biochemical mechanisms involved in the development of resistance to different classes of antimicrobial agents
- 3) Given a representative chemical structure or name of a drug, know its biochemical mechanisms of action and for development of resistance
- 4) Given a representative chemical structure or name of a drug, know its major chemical, pharmacologic, or therapeutic categorization
- 5) Given a representative chemical structure or name of a drug, know its major therapeutic uses and spectrum of activity
- 6) Given a representative chemical structure or name of a drug, know important aspects of its absorption, pharmacokinetics, and metabolism
- 7) Know important chemical features (i.e., polar or lipophilic properties, labile groups, etc.) that affect the absorption, distribution, metabolism, elimination, potency, stability, or formulation of a class of antimicrobial agents
- 8) Given the chemical structure of an antimicrobial agent, know important chemical changes that will predictably alter its properties (i.e., potency, duration of action, stability, etc.)
- 9) Given a representative chemical structure or name of a drug, know its most common or serious adverse or side effects

TEXTBOOK: Goodman & Gilman's The Pharmacological Basis of Therapeutics, Ninth Edition

ReadingIn Text

1029-1032 I. General Considerations, Categorization, and
 1044 Sensitivity Testing of Antimicrobial Agents

The following areas will be covered for each outline topic below:

- General Chemical Structures and Properties of Agents
- Biochemical Mechanisms of Action for Agents
- Biochemical Mechanisms Involved in the Development of Microbial Resistance
- Important Aspects of Absorption, Distribution, Metabolism, and Elimination for Agents
- Antimicrobial Spectrum of Activity for Agents
- Important Adverse Effects and Drug Interactions for Agents

Reading
In Text

- 1057-1065
1065-1068
- 1073-1089
1097-1098
1089-1096
1096-1097
- 1143-1147
1103-1117
1124-1130
1135-1140
1130-1135
1141-1143
995-998
1148
- II. Antibacterial Agents**
- A. Sulfonamides and TRIMETHOPRIM
 - B. Quinolones, Fluoroquinolones
 - C. Beta-lactam Antibiotics
 - 1. Penicillins
 - 2. Beta-lactamase inhibitors (CLAVULANIC ACID, SULBACTAM, TAZOBACTAM)
 - 3. Cephalosporins
 - 4. Carbapenems (IMIPENEM), Carbacephems (LORACARBEF), Monobactams (AZTREONAM)
 - D. POLYMYXIN, VANCOMYCIN, TEICHOPLANIN, BACITRACIN
 - E. Aminoglycosides
 - F. Tetracyclines
 - G. Macrolides (ERYTHROMYCIN, AZITHROMYCIN, CLARITHROMYCIN)
 - H. CHLORAMPHENICOL
 - I. CLINDAMYCIN
 - J. METRONIDAZOLE
 - K. Streptogramins (QUINUPRISTIN, DALFOPRISTIN)
 - L. Oxazolidinones (LINEZOLID)
- 1155-1163
- III. Antitubercular Agents**
- * ISONIAZID RIFAMPIN PYRAZINAMIDE ETHAMBUTOL *
- 1175-1186
- IV. Antifungal Agents**
- * AMPHOTERICIN B MICONAZOLE CLOTRIMAZOLE KETOCONAZOLE *
 - * FLUCONAZOLE ITRAZONAZOLE GRISEOFULVIN FLUCYTOSINE TERBINAFINE
- 1194
1195
- 1191-1203
- 1209-1214
- V. Antiviral Agents**
- A. Review of Viral DNA and RNA Biochemical Processes
 - B. Chemistry, Biochemical Mechanisms of Action and Resistance Development
 - C. Major Pharmacokinetic Properties and Adverse Effects
 - D. Non-HIV Antiviral Agents
 - * ACYCLOVIR CIDOFOVIR FAMCICLOVIR FOSCARNET GANCICLOVIR *
 - * PENCICLOVIR RIBAVIRIN TRIFLURIDINE VALACYCLOVIR CIDOFOVIR *
 - * ZANAMIVIR OSELTAMIVIR AMANTADINE RIMANTIDINE *
- 1204-1209
- 1215-1216
- 1216-1217
- 999-1001
- VI. HIV Antiviral Agents**
- A. Nucleoside Reverse Transcriptase Inhibitors
 - * ZIDOVUDINE DIDANOSINE STAVUDINE ZALCITABINE *
 - * LAMIVUDINE ABACAVIR *
 - B. Non-Nucleoside Reverse Transcriptase Inhibitors
 - * NEVIRAPINE DELAVIRDINE EFAVIRENZ *
 - C. Protease Inhibitors
 - * SAQUINAVIR INDINAVIR RITONAVIR NELFINAVIR AMPRENAVIR *
 - D. Drugs for Opportunistic Infections
 - * PENTAMIDINE ATOVAQUONE *